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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,583	06/26/2003	David William Boerstler	AUS920030145US1	5110

7590

04/01/2004

Gregory W. Carr
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EXAMINER

NGUYEN, LINH M

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/606,583	Applicant(s) BOERSTLER, DAVID WILLIAM	
	Examiner Linh M. Nguyen	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-25 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-25 are presented in the instant application according to the Applicant's filing on 06/26/2003.

Claim Objections/Minor Informalities

1. Claim 1 is objected to because of the following informalities:

Line 6, antecedent for "a phase error signal" has already been recited in line 1. It is suggested that "a" be changed to --the --.

Line 4, antecedent for "a reference signal" and "a feedback signal" have already been recited in lines 1 and 2. It is suggested that "a" be changed to --the --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kasahara et al. (U.S. Pub. No. 2001/0016476).

With respect to claim 1, Kasahara et al. discloses, in Figure 1, a method of generating a phase error signal [UP, DOWN] from a reference signal [n] and a feedback signal [F], the method comprising the steps of receiving the reference signal and the feedback signal using an input circuit [11A, 11B, *for input signals to phase comparator 12*]; generating the phase error

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signal [UP, DOWN] using a phase error detector circuit [12]; and resetting [/RES] the input circuit [11A] and, after a delay [19], resetting the phase error detector circuit.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al. (U.S. Pub. No. 2001/0016476).

With respect to claim 2-5, Kasahara et al. discloses, in Fig. 1, all of the claimed limitations as expressly recited in claim 1, except for the amount of delay is a) variable and is used to select an appropriate amount of delay to reduce a dead zone to less than one picosecond; b) variable from 5% to 25% of the period of the reference signal; c) temporarily set at an amount appropriate to reduce the dead zone to less than one picosecond; and d) temporarily set at a value between 5% and 25% of the period of the reference signal.

It would have been an obvious matter of preference or requirement bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose the particular claimed amount of delay limitations because applicant has not disclosed that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See MPEP 2144.05(II): "Generally, differences in

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concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical.

‘[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.’” In re Aller, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955). See also In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989), and In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990). As set forth in MPEP 2144.05(III), “Applicant can rebut a prima facie case of obviousness based on overlapping ranges by showing the criticality of the claimed range. ‘The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.’ In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.”

Allowable Subject Matter

6. Claims 6-25 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art on record does not show or fairly suggest:

- A method of generating a phase error signal including the step of generating a derived reference signal and a derived feedback signal, based on a reference signal and a feedback signal,

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using a first and second dynamic AND circuit, respectively, until a second reset signal is received, in combination with the remaining claimed limitations, as called for in claim 6;

- An apparatus for generating a phase error signal from a reference signal and a feedback signal, the apparatus including means for setting a first and second latch after receiving the reference signal and the feedback signal, respectively, and for generating a latched reference signal and a latched feedback signal, respectively, until a first reset signal received, in combination with the remaining claimed limitations, as called for in claim 11;

- A computer program product for generating a phase error signal having a medium with a computer program including computer code for setting a first and second latch after receiving the reference signal and the feedback signal, respectively, and for generating a latched reference signal and a latched feedback signal, respectively, until a first reset signal received, in combination with the remaining claimed limitations, as called for in claim 16; and

- A phase/frequency detector circuit including a second NOR circuit coupled to the second latch circuit for receiving the latched feedback signal and coupled to the second dynamic AND circuit for receiving the derived feedback signal, and for generating the second NOR signal, in combination with the remaining claimed limitations, as called for in claim 21.

Citation of Relevant Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art McDonagh (U.S. Patent No. 6,239,634) discloses an apparatus and method for enduring the correct start-up and locking of a delay locked loop.

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Prior art Chu et al. (U.S. Patent No. 6,127,866) discloses a delay-locked loop (DLL) having symmetrical rising and falling clock edge type delays.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh M. Nguyen whose telephone number is (571) 272-1749. The examiner can normally be reached on Alternate Mon, Tuesday - Friday from 7:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linh M. Nguyen
Examiner
Art Unit 2816

LMN

A handwritten signature in black ink, appearing to read 'Linh M. Nguyen', with a stylized, flowing script.